

Figure 1 displays 12 histograms showing the distribution of the number of non-zero elements in the vector x_k for k from 0 to 11. The x-axis is labeled x_k and ranges from 0 to 10. The y-axis is labeled 'count' and ranges from 0 to 10. The distributions are centered around 5 for $k=0$, 4 for $k=1$, 3 for $k=2$, 2 for $k=3$, 1 for $k=4$, 0 for $k=5$, and then shift back to 5 for $k=6$, 4 for $k=7$, 3 for $k=8$, 2 for $k=9$, 1 for $k=10$, and 0 for $k=11$.